DECISION DOCUMENTATION PACKAGE
COVER SHEET

PREPARED IN ACCORDANCE WITH

TRACK 1 SITES:
GUIDANCE FOR ASSESSING
LOW PROBABILITY HAZARD SITES
AT INEL

SITE DESCRIPTION: CPP-604 RADIOACTIVE WASTE UNLOADING AREA.

SITE ID: CPP-20 **OPERABLE UNIT:** 3-07

WASTE AREA GROUP: 3

I. SUMMARY - PHYSICAL DESCRIPTION OF THE SITE:

Site CPP-20 is the location of the Radioactive Waste Unloading Area north of Building 604 which was used prior to 1978. Waste from other INEL facilities were transported to ICPP where it was unloaded at this location via transfer hoses. The liquids were transferred to an underground storage tank prior to concentration in the PEW Evaporator. It is known that the liquid contained radioactive contaminants and was required to have a pH of less than 2. It has been reported that occasional spills occurred during the unloading process as a result of leaks in the hoses. The spills were reportedly cleaned up as they occurred. Although, no records on the types, quantities, and locations of the spills or disposal practices exist to verify clean up occurred, it is known that the entire site was excavated and replaced with clean backfill during upgrades in the Tank Farm in 1982 and in 1983-84 as part of the Phase I and II Fuel Processing Facility Upgrade Project.

II. SUMMARY - Qualitative Assessment of Risk:

Due to the fact that the site has been excavated and backfilled with clean material, the qualitative assessment of risk is low with a high overall reliability.

III. SUMMARY - Consequences of Error:

Based upon process knowledge, low level radiation would be expected in the soil. In addition, current surface radiation surveys do not indicate surface radiation in this area. Compared to the balance of the tank farm sites which contain high level radiation, this site will not contribute significantly to the background radiation levels found in the tank farm.

IV. SUMMARY - Other Decision Drivers:

None

Recommended action:

The recommended action for CPP-20 is No Further Field Investigation. The recommendation is based upon the fact that the entire site contained low level radioactivity, and was excavated and replaced with clean fill during phase I and II of the Fuel Processing Facility Upgrade Project. The excavation has been documented by photographs and personnel interviews of construction engineers that worked on the project.

In addition, it is recommended that the low level contaminated backfill soil, left in the bottom 10 feet of the 40 foot excavation, be considered and characterized in the Comprehensive RI/FS for the ICPP. This recommendation is being made due to the fact that WINCO policy had been to allow backfill with materials in excavations meeting a certain contamination threshold criteria. The criteria has become more stringent over the years however, the practice is no longer allowed. This practice will be further investigated as part of the comprehensive RI/FS. The impact of the contaminated soil to the ground water will be modelled and any risk will be assessed.

Signatures	# PAGES:	DATE:
Prepared By:	DOE WAG Manager:	
Approved By:	Independent Review:	

PROCESS/WASTE WORKSHEET
SITE ID CPP-20

Col 1 Processes Associated with this Site	Col 2 Waste Description & Handling Procedures	Col 3 Description & Location of any Artifacts/Structures/Disposal Areas Associated with this Waste or Process
Process Unloading of wastes for treatment in PEW evaporator.	Low level liquid radioactive wastes which were spilled during unloading may have also contained some metals and organics.	Artifact Building CPP-604 Location ICPP Description Building adjacent to unloading area.
		Artifact Underground PEW Tank WL 102 Location North end of Building 604 Description Holding tank for liquids prior to treatment
		Artifact Location Description
Process		Artifact Location Description
		Artifact Location Description
		Artifact Location Description
Process		Artifact Location Description
		Artifact Location Description
		Artifact Location Description

CONTAMINANT WORKSHEET
SITE ID CPP-20
PROCESS (Col 1) Unloading of liquid waste for treatment **WASTE** (Col 2) LIQUID WASTE

Col 4 What known/potential hazardous substances/constituents are associated with this waste or process?	Col 5 Potential sources associated with this hazardous material	Col 6 Known/estimated concentration of hazardous substances/ constituents[a]	Col 7 Risk based concentration mg/kg	Col 8 Qualitative risk assessment (Hi/Med/Lo)	Col 9 Overall reliability (Hi/Med/Lo)
Radioactive Constituents	N/A, Contaminated soil removed	N/A		Low	High
Metals	N/A, Contaminated soil removed	N/A		Low	High
Acids	N/A, Contaminated soil removed	N/A		Low	High
Organics	N/A, Contaminated soil removed	N/A		Low	High

a. ND = not detected
DL = detection limit in ppm

Question 1. What are the waste generation process locations and dates of operation associated with this site?

Block 1 Answer:

This site is the location of the Radioactive Waste Unloading Area north of building CPP-604. This area was used for unloading waste prior to 1978. Waste from other INEL facilities were transported to CPP where it was unloaded via hoses from pressurized tank trucks for evaporation in the PEW evaporator.

Block 2 How reliable is/are the information source/s? X High __Med __Low (check one)

EXPLAIN THE REASONING BEHIND THIS EVALUATION.

The information was from the initial assessment (ref. 1) that used site inspections, personnel interviews, and process records as a basis of reporting. In addition, interviews of personnel involved with the operation were used.

Block 3 Has this INFORMATION been confirmed? x Yes __No (check one)

IF SO, DESCRIBE THE CONFIRMATION.

Interviews with two separate plant project personnel, attached as references 2a and 2b confirm this information.

Block 4 **SOURCES OF INFORMATION** (check appropriate box/es & source number from reference list)

No available information	[ ]		Analytical data	[ ]	
Anecdotal	[ ]		Documentation about data	[ ]	
Historical process data	[ ]		Disposal data	[ ]	
Current process data	[ ]		Q.A. data	[ ]	
Areal photographs	[ ]		Safety analysis report	[ ]	
Engineering/site drawings	[ ]		D&D report	[ ]	
Unusual Occurrence Report	[ ]		Initial assessment	[x]	1
Summary documents	[ ]		Well data	[ ]	
Facility SOPs	[ ]		Construction data	[ ]	
OTHER	[x]	2a, b			

Question 2. What are the disposal process locations and dates of operation associated with this site?

Block 1 Answer:

Prior to 1978, liquids were transferred to tank WL 102 prior to concentration in the PEW Evaporator. Occasional liquid spills during the unloading process were reported to have occurred. Contaminants of concern were cited to be radionuclides, acids and metals (chromium). The liquids may also have contained organics. Based upon interviews with personnel it was not required to analyze every delivery, therefore other constituents may have been present. The occasional spills were reportedly cleaned up as they occurred.

Block 2 How reliable is/are the information source/s? X High __Med __Low (check one)

EXPLAIN THE REASONING BEHIND THIS EVALUATION.

The information was from the initial assessment (ref. 1) that used site inspections, personal interviews, and process records as a basis of reporting. In addition, interviews of personnel involved with the operation were used.

Block 3 Has this INFORMATION been confirmed? X Yes __No (check one)

IF SO, DESCRIBE THE CONFIRMATION.

Interviews with two separate plant personnel, attached as references 2a and 2b confirm this information.

Block 4 **SOURCES OF INFORMATION** (check appropriate box/es & source number from reference list)

No available information	[ ]		Analytical data	[ ]	
Anecdotal	[ ]		Documentation about data	[ ]	
Historical process data	[ ]		Disposal data	[ ]	
Current process data	[ ]		Q.A. data	[ ]	
Areal photographs	[ ]		Safety analysis report	[ ]	
Engineering/site drawings	[ ]		D&D report	[ ]	
Unusual Occurrence Report	[ ]		Initial assessment	[X]	1
Summary documents	[ ]		Well data	[ ]	
Facility SOPs	[ ]		Construction data	[ ]	
OTHER	[x]	2a, 2b, 2c			

Question 3. Is there empirical, circumstantial, or other evidence of migration? If so, what is it?

Block 1 Answer:

No, the entire area was excavated in 1982 and 1983-84, during phase I and II of the Fuel Processing Facility Upgrade Project. During phase I, the entire area was excavated down to 40 feet. Based upon personnel interviews, the first 10 feet of soils were backfilled with 5 mR dirt which was then covered with 30 feet of clean fill. The source of clean fill is unknown. During phase II the area appears to have been excavated again. Based upon the personnel interviews, soils were excavated down to forty feet for the 1983 project (phase II). Only at the location of valve box C-30 were soils found to be contaminated and were subsequently removed. This project would have removed the eastern sections of sites CPP 20 and 25. The excavated soils were stock piled and contaminated soils separated and later placed in site CPP-34. Fill materials placed back into the excavation consisted of 3 mR material placed in the bottom 10 feet and clean soils placed in the upper 30 feet. The sources of the clean soils included the soils excavated from a sand and gravel pit located at CFA.

Block 2 How reliable is/are the information source/s? x High __Med __Low (check one)
Explain the reasoning behind this evaluation.

Photographs of phase I and II (ref. 3a, 3b, 5, 6), and personnel interviews with the construction engineers were used and are considered highly reliable. In addition, a report of disposal of the excavated materials (ref. 4) was available.

Block 3 Has this INFORMATION been confirmed? x Yes __No (check one)
If so, describe the confirmation.

Interviews with two separate project personnel were conducted to verify the excavation.

Block 4 **Sources of Information** (check appropriate box/es & source number from reference list)

No available information	[ ]		Analytical data	[ ]	
Anecdotal	[ ]		Documentation about data	[ ]	
Historical process data	[ ]		Disposal data	[ ]	
Current process data	[ ]		Q.A. data	[ ]	
Areal photographs	[x]	3a,3b, 5, 6	Safety analysis report	[ ]	
Engineering/site drawings	[ ]		D&D report	[ ]	
Unusual Occurrence Report	[ ]		Initial assessment	[ ]	
Summary documents	[ ]		Well data	[ ]	
Facility SOPs	[ ]		Construction data	[x]	4
OTHER	[x]	2a, 2b, 2c			

Question 4. Is there evidence that a source exists at this site? If so, list the sources and describe the evidence.

Block 1 Answer:

No, the entire area has been excavated which would have removed the original source. However, based upon personnel interviews, during the 1982 excavation, 5 mR soil was used as backfill material in the bottom 10 feet of the excavation and the upper 30 feet was backfilled with clean material. The source for the clean material is unknown. In addition, 3 mR soil was used as fill material at the bottom 10 feet of the excavation in 1983-84. Clean fill material, taken from a soil/gravel pit at CFA, was placed in the upper 30 feet.

Block 2 How reliable is/are the information source/s? X High __Med __Low (check one)

EXPLAIN THE REASONING BEHIND THIS EVALUATION.

The information is based on photographs taken during Phase I and II (ref. 3a, 3b, 5, 6) of the project and personnel interviews.

Block 3 Has this INFORMATION been confirmed? X Yes __No (check one)

IF SO, DESCRIBE THE CONFIRMATION.

Interviews with two separate project personnel (ref. 2a, 2b, 2c) who worked on the project.

Block 4 **SOURCES OF INFORMATION** (check appropriate box/es & source number from reference list)

No available information	[ ]		Analytical data	[ ]	
Anecdotal	[ ]		Documentation about data	[ ]	
Historical process data	[ ]		Disposal data	[ ]	
Current process data	[ ]		Q.A. data	[ ]	
Areal photographs	[x]	3a 3b, 5, 6	Safety analysis report	[ ]	
Engineering/site drawings	[ ]		D&D report	[ ]	
Unusual Occurrence Report	[ ]		Initial assessment	[ ]	
Summary documents	[ ]		Well data	[ ]	
Facility SOPs	[ ]		Construction data	[ ]	
OTHER	[x]	2a, 2b, 2c			

Question 5. Does site operating or disposal historical information allow estimation of the pattern of potential contamination? If the pattern is expected to be a scattering of hot spots, what is the expected minimum size of a significant hot spot?

Block 1 Answer:

The original releases would have been a scattering of hot spots since they occurred due to holes in the discharge hoses used to unload the liquid wastes. However, the entire area has been excavated. Based upon personnel interviews, the bottom 10 feet of the 1982 and 1983-84 excavations were backfilled with fill material contaminated to levels of 5 mR and 3 mR, respectively. The backfill is assumed to be homogeneous.

Block 2 How reliable is/are the information source/s? x High __Med __Low (check one)

EXPLAIN THE REASONING BEHIND THIS EVALUATION.

The information was taken from the photographs and personnel interviews.

Block 3 Has this INFORMATION been confirmed? x Yes __No (check one)

IF SO, DESCRIBE THE CONFIRMATION.

Interviews with two separate project personnel who worked on the project, and photographs of the excavations taken during the project.

Block 4 **SOURCES OF INFORMATION** (check appropriate box/es & source number from reference list)

No available information	[ ]		Analytical data	[ ]	
Anecdotal	[ ]		Documentation about data	[ ]	
Historical process data	[ ]		Disposal data	[ ]	
Current process data	[ ]		Q.A. data	[ ]	
Areal photographs	[x]	3a, 3b, 5, 6	Safety analysis report	[ ]	
Engineering/site drawings	[ ]		D&D report	[ ]	
Unusual Occurrence Report	[ ]		Initial assessment	[X]	1
Summary documents	[ ]		Well data	[ ]	
Facility SOPs	[ ]		Construction data	[x]	3
OTHER	[x]	2a, 2b, 2c			

Question 6. Estimate the length, width, and depth of the contaminated region. What is the known or estimated volume of the source? If this is an estimated volume, explain carefully how the estimate was derived.

Block 1 Answer:

The original area has been excavated. However, based upon personnel interviews 5 mR soil was placed at the bottom 10 feet of the excavation in phase I and 3 mR soil in the bottom of the excavation for phase II. The total area excavated is approximately 7,053 ft^2.

Block 2 How reliable is/are the information source/s? __High __Med x Low (check one)

EXPLAIN THE REASONING BEHIND THIS EVALUATION.

Actual quantities are unknown, the estimate was is based on photographs of the excavation taken during the project.

Block 3 Has this INFORMATION been confirmed? __Yes x No (check one)

IF SO, DESCRIBE THE CONFIRMATION.

The quantity of backfill material has not been confirmed.

Block 4 **SOURCES OF INFORMATION** (check appropriate box/es & source number from reference list)

No available information	[ ]		Analytical data	[ ]	
Anecdotal	[ ]		Documentation about data	[ ]	
Historical process data	[ ]		Disposal data	[ ]	
Current process data	[ ]		Q.A. data	[ ]	
Areal photographs	[x]	3a, 3b, 5, 6	Safety analysis report	[ ]	
Engineering/site drawings	[ ]		D&D report	[ ]	
Unusual Occurrence Report	[ ]		Initial assessment	[ ]	
Summary documents	[ ]		Well data	[ ]	
Facility SOPs	[ ]		Construction data	[ ]	
OTHER	[x]	2a, 2b, 2c			

Question 7. What is the known or estimated quantity of hazardous substance/constituent at this source? If the quantity is an estimate, explain carefully how the estimate was derived.

Block 1 Answer:

The original area was excavated. The quantity of hazardous substance placed in the bottom 10 feet of the two excavations is unknown.

Block 2 How reliable is/are the information source/s? _xHigh __Med __Low (check one)

EXPLAIN THE REASONING BEHIND THIS EVALUATION.

Photographs of the evacuations (ref. 3a, 3b, 5, 6) were used to determine that the original area was completely excavated.

Block 3 Has this INFORMATION been confirmed? _X_Yes ___No (check one)

IF SO, DESCRIBE THE CONFIRMATION.

Interviews with two separate project personnel who worked on the project, confirmed that the area had been completely excavated.

Block 4 **SOURCES OF INFORMATION** (check appropriate box/es & source number from reference list)

No available information	[ ]		Analytical data	[ ]	
Anecdotal	[ ]		Documentation about data	[ ]	
Historical process data	[ ]		Disposal data	[ ]	
Current process data	[ ]		Q.A. data	[ ]	
Areal photographs	[x]	3a, 3b, 5, 6	Safety analysis report	[ ]	
Engineering/site drawings	[ ]		D&D report	[ ]	
Unusual Occurrence Report	[ ]		Initial assessment	[ ]	
Summary documents	[ ]		Well data	[ ]	
Facility SOPs	[ ]		Construction data	[ ]	
OTHER	[x]	2a, 2b, 2c			

Question 8. Is there evidence that this hazardous substance/constituent is present at the source as it exists today? If so, describe the evidence.

Block 1 Answer:

No, all reports indicate that the soils at this location have been removed. However, based upon personnel interviews 5 mR soil was placed at the bottom 10 feet of the excavation during phase I of the project and 3 mR soil in the bottom of the excavation during phase II.

In addition, the site wide surface radiation surveys conducted in 1990 and 1991 did not measure radiation levels above background levels at this site (ref. 7).

Block 2 How reliable is/are the information source/s? x High __Med __Low (check one)

EXPLAIN THE REASONING BEHIND THIS EVALUATION.

The information sources used were interviews with project personnel involved during phase I and Phase II of the project and photographs that show the area as having been completely excavated.

Block 3 Has this INFORMATION been confirmed? _XYes __No (check one)

IF SO, DESCRIBE THE CONFIRMATION.

Photographs of the excavation, and interviews with two separate project personnel. Also, the results of the surface radiation survey conducted in 1990 and 1991 verify the absence of surface contamination.

Block 4 **SOURCES OF INFORMATION** (check appropriate box/es & source number from reference list)

No available information	[ ]		Analytical data	[x]	7
Anecdotal	[ ]		Documentation about data	[ ]	
Historical process data	[ ]		Disposal data	[ ]	
Current process data	[ ]		Q.A. data	[ ]	
Areal photographs	[x]	3a, 3b, 5, 6	Safety analysis report	[ ]	
Engineering/site drawings	[ ]		D&D report	[ ]	
Unusual Occurrence Report	[ ]		Initial assessment	[ ]	
Summary documents	[ ]		Well data	[ ]	
Facility SOPs	[ ]		Construction data	[ ]	
OTHER	[X]	2a, 2b, 2c			

REFERENCES

1. WINCO Initial Assessment Form, July 8, 1987.

2(a). WINCO, Memo of Conversation, December 17, 1991, between Neilson Birch, Environmental Compliance and Frank Ward, Plant Projects Personnel.

2(b). WINCO, Memo of Conversation, December 18, 1991, between Neilson Birch, Environmental Compliance and George Bruha, Plant Projects Personnel.

2(c). WINCO, Memo of Conversation, January 8, 1992, between Brenda Cole, Environmental Compliance and George Bruha, Plant Projects Personnel.

3(a). WINCO, Photograph, Project Title: Fuel Processing Facility Upgrade (FPFU) - Low-Level Waste Collection System Modification, Contract # S-2165, Date: November 11, 1983, Subject: Cell Walls to EL-4895' 0" - 83-602-1-6 (Phase II).

3(b). WINCO, Photograph #82 3471, Photographic Services WCB W-1 (Phase I).

4. WINCO, Environmental Evaluation for disposal of WL-102 Low Level Contaminated Soil, May 17, 1984.

5. WINCO, Photograph # 82-3468, Photographic Services

6. WINCO, Photograph # 82-3468, Photographic Services

7. 1990 - 1991 Surface Radioactivity Cleanup Status

ECA 20 REFERENCE 1

INITIAL ASSESSMENT FORM

I. SITE NAME AND LOCATION

01 SITE NAME	02 ADDRESS
CPP-604 radioactive waste unloading area.	Idaho National Engineering Laboratory (INEL)

03 CITY	04 STATE	05 ZIP CODE	06 COUNTY
Scoville	Idaho	83403	Butte

09 COORDINATES: NORTH	EAST	07 COUNTY CODE	08 CONG. DIST.
6 9 5 4 8 8	2 9 6 8 7 5		

10 DIRECTIONS TO SITE (Starting from nearest public road)
N. on Lincoln Blvd.; E. on Cleveland Ave.

II. OWNER/OPERATOR

01 OWNER (If known)	02 STREET ADDRESS		
Department of Energy (DOE)	785 DOE Place		
03 CITY	**04 STATE**	**05 ZIP CODE**	**06 TELEPHONE NUMBER**
Idaho Falls	Idaho	83402	(208) 526-1122
07 OPERATOR (If known)	**08 STREET ADDRESS**		
Westinghouse Idaho Nuclear Co.	P.O. Box 4000		
09 CITY	**10 STATE**	**11 ZIP CODE**	**12 TELEPHONE NUMBER**
Idaho Falls	Idaho	83403	(208) 526-0998

III. CHARACTERIZATION OF POTENTIAL HAZARD

01 ON SITE INSPECTION x YES __ NO DATE 7 /10 /86

02 SITE STATUS (Check one)	03 YEARS RECEIVED HAZ WASTE
__ A. Active SWMU x B. Inactive __ C. Unknown	____ / ____ (Start / Stop) x Unknown

04 DESCRIPTION OF SUBSTANCES POSSIBLY PRESENT, KNOWN, OR ALLEGED
See Waste Information Section

05 DESCRIPTION OF POTENTIAL HAZARD TO ENVIRONMENT AND/OR POPULATION
See Hazardous Conditions and Incidents Section

IV. INFORMATION AVAILABLE FROM

01 CONTACT	02 OF (Agency/Org.)	03 TELEPHONE NUMBER
Clifford Clark	DOE-ID	(208) 526-1122

04 PERSON RESPONSIBLE FOR ASSESSMENT	05 AGENCY	06 ORG.	07 TELEPHONE NUMBER
D. Joan Poland	WINCO	N&IS	(208) 526-3650

08 DATE
7 / 8 /87
Mon Day Year

WASTE INFORMATION

I. WASTE STATES, QUANTITIES, AND CHARACTERISTICS

01 PHYSICAL STATES (Check all that apply)

__A. Solid
__B. Powder Fines
__C. Sludge
__D. Other Contaminated soil
__E. Slurry
__F. Liquid
__G. Gas

02 WASTE QUANTITY AT SITE

TONS
CUBIC YARDS 10
NO. OF DRUMS

03 WASTE CHARACTERISTICS (Check all that apply)

__A. Toxic
__B. Corrosive
__C. Radioactive
__D. Persistent
__E. Soluble
__F. Infectious
__G. Flammable
__H. Ignitable
__I. Highly Volatile
__J. Explosive
__K. Reactive
__L. Incompatible
__M. Not Applicable

II. WASTE TYPE

CATEGORY	SUBSTANCE NAME	01 GROSS AMOUNT	02 UNIT	COMMENTS
SLU	Sludge			
OLW	Oily Waste			
SOL	Solvents			
PSD	Pesticides			
OCC	Other organic chemicals			
IOC	Inorganic chemicals			
ACD	Acids			
BAS	Bases			
MES	Heavy metals			

III. HAZARDOUS CONSTITUENTS

01 CATEGORY	02 SUBSTANCE	03 CAS NUMBER	04 STOR/DISP	05 CONC.	06 MEASURE
MES	CHROMIUM		OD		

IV. SOURCES OF INFORMATION

Use specific references, e.g., state titles, sample analysis reports, etc.)
Site inspections, personnel interviews, process records, laboratory records.

HAZARDOUS CONDITIONS AND INCIDENTS

I. HAZARDOUS CONDITIONS AND INCIDENTS

01 __ A. GROUNDWATER CONT. 02 __ OBSERVED (Date _____) __ POTENTIAL
03 NARRATIVE DESCRIPTION: __ ALLEGED

N/A

01 __ B. SURFACE WATER CONT. 02 __ OBSERVED (Date _____) __ POTENTIAL
03 NARRATIVE DESCRIPTION: __ ALLEGED

N/A

01 __ C. CONTAMINATION OF AIR 02 __ OBSERVED (Date _____) __ POTENTIAL
03 POPULATION POTENTIALLY AFFECTED _____ 04 NARRATIVE DESCRIPTION __ ALLEGED

N/A

01 __ D. FIRE/EXPLOSIVE CONDITIONS 02 __ OBSERVED (Date _____) __ POTENTIAL
03 POPULATION POTENTIALLY AFFECTED _____ 04 NARRATIVE DESCRIPTION __ ALLEGED

N/A

01 __ E. DIRECT CONTACT 02 __ OBSERVED (Date _____) __ POTENTIAL
03 POPULATION POTENTIALLY AFFECTED _____ 04 NARRATIVE DESCRIPTION __ ALLEGED

N/A

01 _x_ F. CONTAMINATION OF SOIL 02 __ OBSERVED (Date _____) _x_ POTENTIAL
03 NARRATIVE DESCRIPTION: __ ALLEGED

Volume of potentially contaminated soil is approxiately 10 cubic yards.

01 __ G. DRINKING WATER CONTAMINATION 02 __ OBSERVED (Date _____) __ POTENTIAL
03 NARRATIVE DESCRIPTION: __ ALLEGED

N/A

HAZARDOUS CONDITIONS AND INCIDENTS

I. HAZARDOUS CONDITIONS AND INCIDENTS (Continued)

01 __ J. DAMAGE TO FLORA 02 __ OBSERVED (Date _____) __ POTENTIAL
04 NARRATIVE DESCRIPTION: __ ALLEGED

N/A

01 __ K. DAMAGE TO FAUNA 02 __ OBSERVED (Date _____) __ POTENTIAL
04 NARRATIVE DESCRIPTION: (include name(s) of species) __ ALLEGED

N/A

01 __ L. CONTAMINATION OF FOOD CHAIN 02 __ OBSERVED (Date _____) __ POTENTIAL
04 NARRATIVE DESCRIPTION: __ ALLEGED

N/A

01 __ M. UNSTABLE CONTAINMENT OF WASTES 02 __ OBSERVED (Date _____) __ POTENTIAL
(SPILL RUNOFF, STANDING LIQUIDS/LEAKING DRUMS)
03 NARRATIVE DESCRIPTION: __ ALLEGED

N/A

01 __ N. DAMAGE TO OFFSITE PROPERTY 02 __ OBSERVED (Date _____) __ POTENTIAL
04 NARRATIVE DESCRIPTION: __ ALLEGED

N/A

01 __ O. CONTAMINATION OF SEWERS,STORM DRAINS, WWTPs 02 __ OBSERVED(Date _____) __ POTENTIAL
04 NARRATIVE DESCRIPTION: __ ALLEGED

N/A

01 __ P. ILLEGAL/UNAUTHORIZED DUMPING 02 __ OBSERVED (Date _____) __ POTENTIAL
04 NARRATIVE DESCRIPTION: __ ALLEGED

N/A

05 DESCRIPTION OF ANY OTHER KNOWN, POTENTIAL OR ALLEGED HAZARDS
The area has been identified as receiving radioactive waste. Therefore, there is a potential that the area may contain radioactive material in addition to hazardous material.

III. COMMENTS

IV. SOURCES OF INFORMATION (List specific references, e.g., state titles, sample analysis, reports)
Site inspections, personnel interviews, and Installation Assessment Report.

Revised 7/7/07 4.

PRIORITY RANKING SYSTEM

I. GENERAL FACILITY INFORMATION

FACILITY NAME: CPP-604 Radioactive Waste Unload Area

LOCATION: North CPP-604

POINT OF CONTACT: NAME: _____

ADDRESS: _____

PHONE: _____

REVIEWER: D. Joan Poland DATE: 7/7/07

II. GENERAL FACILITY DESCRIPTION

GENERAL DESCRIPTION OF THE FACILITY: (For example: landfill, surface impoundment, pile, container; types of hazardous substances; location of facility; contamination route of major concern; types of information needed for rating; agency action, etc.)

Waste unloading area. Waste from other INEL facilities was trucked to CPP where it was unloaded for evaporation in the PEW evaporator. Occasional spills were cleaned up as they occurred. Some liquid wastes may have contained chromium in addition to the radioactivity.

III. SCORES

SM = 13.4 (Sgw= 33.1 Ssw= 0 Sa= 0)

SFE = 0

SDC = 0

GROUND WATER ROUTE WORKSHEET

RATING FACTOR	ASSIGNED VALUE (Circle one)	MULTI-PLIER	SCORE	MAX. SCORE	REF. Section
					3.2
1.ROUTE CHARACTERISTICS					
Depth to Aquifer of Concern	(0) 1 2 3	2		6	
Net Precipitation	(0) 1 2 3	1		3	
Permeability of the Unsaturated Zone	0 1 (2) 3	1		3	
Physical State	0 1 2 (3)	1		3	
Total Route Characteristics Score			5	15	
2.CONTAINMENT	0 1 2 (3)	1	3	3	3.3
3.WASTE CHARACTERISTICS					3.4
Toxicity/Persistence	0 3 6 9 12 15 (18)	1		18	
Hazardous Waste Quantity	(0) 1 2 3 4 5 6 7 8	1		8	
Total Waste Characteristics Score			18	26	
4. Multiply lines 1 x 2 x 3			270	1170	

5. Divide line 4 by 1170 and multiply by 100 Sgw= 23.1

SURFACE WATER ROUTE WORKSHEET

RATING FACTOR	ASSIGNED VALUE (Circle one)	MULTI-PLIER	SCORE	MAX. SCORE	REF. Section
					4.2
1. ROUTE CHARACTERISTICS					
Facility Slope and Intervening Terrain	(0) 1 2 3	1		3	
1-yr. 24-hr. Rainfall	0 (1) 2 3	1		3	
Distance to Nearest Surface Water	0 1 (2) 3	2		6	
Physical State	0 1 2 (3)	1		3	
Total Route Characteristics Score			8	15	
2. CONTAINMENT	(0) 1 2 3	1	0	3	4.3
3. WASTE CHARACTERISTICS					4.4
Toxicity/Persistence	0 3 6 9 12 15 (18)	1		18	
Hazardous Waste Quantity	(0) 1 2 3 4 5 6 7 8	1		8	
Total Waste Characteristics Score			18	26	
4. Multiply lines 1 x 2 x 3			0	1170	

5. Divide line 4 by 1170 and multiply by 100 Ssw= 0

AIR ROUTE WORKSHEET

RATING FACTOR	ASSIGNED VALUE (Circle one)	MULTI-PLIER	SCORE	MAX. SCORE	REF. Section
1.HISTORIC RELEASE	(0) 45	1	0	45	5.1
Date and Location: See attached supplement pages					
If line 1 is 0, the Sa = 0. Enter on line 5. If line 1 is 45, then proceed to line 2.					
2.WASTE CHARACTERISTICS					5.2
Reactivity and Incompatibility	0 1 2 3	1		3	
Toxicity	0 1 2 3	3		9	
Hazardous Waste Quantity	0 1 2 3 4 5 6 7 8	1		8	
Total Waste Characteristics Score				20	
3.TARGETS					5.3
Population within 4-mile Radius	0 9 12 15 18 21 24 27 30	1		30	
Distance to Sensitive Environment	0 1 2 3	2		6	
Land Use	0 1 2 3	1		3	
Total Target Scores				39	
4. Multiply lines 1 x 2 x 3				35100	
5. Divide line 4 by 35100 and multiply by 100 Sa = 0					

GROUNDWATER ROUTE SCORE (Sgw)	23.1	533.61
SURFACE WATER ROUTE SCORE (Ssw)	0	0
AIR ROUTE SCORE (Sa)	0	0
$Sgw^2 + Ssw^2 + Sa^2$		533.61
$SQR(Sgw^2 + Ssw^2 + Sa^2)$		23.1
$SQR(Sgw^2 + Ssw^2 + Sa^2)/1.73 = SM$		13.4

Revised 7/7/87 JP

DOCUMENTATION RECORDS
FOR
HAZARD RANKING SYSTEM

INSTRUCTIONS: As briefly as possible, summarize the information you used to assign the score for each factor (e.g., "Waste quantity = 4,230 drums plus 800 cubic yards of sludges"). The source of information should be provided for each entry and should be a bibliographic-type reference. Include the location of the document.

FACILITY NAME: CPP-604 Radioactive Waste Unloading Area

LOCATION: North CPP-604

DATE SCORED: 7/7/87

PERSON SCORING: D. Jean Poland

PRIMARY SOURCE(S) OF INFORMATION:
Site inspections, personnel interviews
process records.

FACTORS NOT SCORED DUE TO INSUFFICIENT INFORMATION:

COMMENTS OR QUALIFICATIONS:
Radionuclide releases also

GROUNDWATER ROUTE

1. OBSERVED RELEASE - Undertake Corrective Action

Contaminants detected (3 maximum):

None

Rationale for attributing the contaminants to the facility:

2. ROUTE CHARACTERISTICS

Depth to Aquifer of Concern

Name/description of aquifer(s) of concern:

Snake River Plain Aquifer

Depth(s) from the ground surface to the highest seasonal level of the saturated zone [water table(s)] of the aquifer of concern:

450 ft

Depth from the ground surface to the lowest point of waste disposal/ storage:

Surface

Net Precipitation

Mean annual or seasonal precipitation (list months for seasonal):

9.07 inches

Mean annual lake or seasonal evaporation (list months for seasonal):

36 inches

Net precipitation (subtract the above figures):

- 26.93 inches

Permeability of Unsaturated Zone

Soil type in unsaturated zone:

An interbedded sequence of basaltic lava flows and sedimentary deposits.

Permeability associated with soil type:

10^{-7} to 10^{-3} cm/sec

Physical State

Physical state of substances at time of disposal (or at present time for generated gases):

liquid

3. CONTAINMENT

Containment

Method(s) of waste or leachate containment evaluated:

None

Method of highest score:

4. WASTE CHARACTERISTICS

Toxicity and Persistence

Compound(s) evaluated:

Heavy Metals (Chromium)

Compound with highest score:

Heavy Metals (Chromium)

Hazardous Waste Quantity

Total quantity of hazardous substances at the facility, excluding those with a containment score of 0 (Give a reasonable estimate even if quantity is above maximum):

Spills were cleaned up as they occurred. No contamination should be remaining but no records to verify.

Basis of estimating and/or computing waste quantity:

No records on types or quantities spilled. See above.

	Yes	No
Identifying Release		
1. Potential for Groundwater Releases from the Unit		
o Unit type and design		
- Does the unit type (e.g., land-based) indicate the potential for release?	✓	
- Does the unit have engineered structures (e.g., liners, leachate collection systems, proper construction materials) designed to prevent releases to groundwater?		✓
o Unit operation		
- Does the unit's age (e.g., old unit) or operating status (e.g., inactive, active) indicate the potential for release?		✓
- Does the unit have poor operating procedures that increase the potential for release?		✓
- Does the unit have compliance problems that indicate the potential for a release to groundwater?		✓
o Physical condition		
- Does the unit's physical condition indicate the potential for release (e.g., lack of structural integrity, deteriorating liners, etc.)?		✓
o Locational characteristics		
- Is the unit located on permeable soil so the release could migrate through the unsaturated soil zone?	✓	
- Is the unit located in an arid area where the soil is less saturated and therefore a release has less potential for downward migration?	✓	
- Does the depth from the unit to the uppermost aquifer indicate the potential for release?		✓

	Yes	No
- Does the rate of groundwater flow greatly inhibit the migration of a release from the facility?	✓	
- Is the facility located in an area that recharges surface water?		✓
o Waste characteristics		
- Does the waste in the unit exhibit high or moderate characteristics of mobility (e.g., tendency not to sorb soil particles or organic matter in the unsaturated zone)?	✓	
- Does the waste exhibit high or moderate levels of toxicity?	✓	
2. Evidence of Groundwater Releases		
o Existing groundwater monitoring systems		
- Is there an existing system?		✓
- Is the system adequate?		✓
- Are there recent analytical data that indicate a release?		✓
o Other evidence of groundwater releases		
- Is there evidence of contamination around the unit (e.g., discolored soils, lack of or stressed vegetation) that indicates the potential for a release to groundwater?		✓
- Does local well water or spring water sampling data indicate a release from the unit?		✓

Determining the Relative Effect of the Release on Human Health and the Environment

1. Exposure Potential		
o Conditions that indicate potential exposure		
- Are there drinking water well(s) located near the unit?		✓
- Does the direction of groundwater flow indicate the potential for hazardous constituents to migrate to drinking water wells?		✓

SURFACE WATER ROUTE

1. OBSERVED RELEASE - Undertake Corrective Action

Contaminants detected in surface water at the facility or downhill from it (3 maximum):

None

Rationale for attributing the contaminants to the facility:

2. ROUTE CHARACTERISTICS

Facility Slope and Intervening Terrain

Average slope of facility in percent:

0.04%

Name/description of nearest downslope surface water:

Big Lost River

Average slope of terrain between facility and above cited surface water body in percent:

0.07%

Is the facility located either totally or partially in surface water?

No

Is the facility completely surrounded by areas of high elevation?

No

1-year 24-Hour Rainfall in Inches

less than 2 inches

Distance to Nearest Downslope Surface Water

1,600 ft

Physical State of Waste

Contaminated Soil

3. CONTAINMENT

Containment

Method(s) of waste or leachate containment evaluated:

None

Method with highest score:

	Yes	No

Identifying Releases

1. Potential for Surface Water/Surface Drainage Release from the Facility

   o Proximity to Surface Water and/or to Off-site Receptors

   - Could surface run-off from the unit reach the nearest downgradient surface water body? ___ ✓

   - Could surface run-off from the unit reach off-site receptors (e.g., if facility is located adjacent to populated areas and no barrier exists to prevent overland surface run-off migration)? ___ ✓

   o Release Migration Potential

   - Does the slope of the facility and intervening terrain indicate potential for release? ___ ✓

   - Is the intervening terrain characterized by soils and vegetation that allow overland migration (e.g., clayey soils, and sparse vegetation)? ___ ✓

   - Does data on one-year 24-hour rainfall indicate the potential for area storms to cause surface water or surface drainage contamination as a result of run-off? ___ ✓

   o Unit Design and Physical Condition

   - Are engineered features (e.g., run-off control systems) designed to prevent release from the unit? ___ ✓

   - Does the operational history of the unit indicate that a release has taken place (e.g., old, closed or inactive unit, not inspected regularly, improperly maintained)? ___ ✓

   - Does the physical condition of the unit indicate that releases may have occurred (e.g., cracks or stress factures in tanks or erosion of earthen dikes of surface impoundments)? ___ ✓

Checklist for Surface Water/Surface Drainage Releases

	Yes	No
o Waste Characteristics		
- Is the volume of discharge high relative to the size and flow rate of the surface water body?	___	✓
- Do constituents in the discharge tend to sorb to sediments (e.g., metals)?	✓	___
- Do constituents in the discharge tend to be transported downstream?	___	✓
- Do waste constituents exhibit moderate or high characteristics of persistence (e.g., PCBs, dioxins, etc.)?	✓	___
- Do waste constituents exhibit moderate or nigh characteristics of toxicity (e.g., metals, chlorinated pesticides, etc.)?	✓	___
2. Evidence of Surface Water/Surface Drainage Releases		
o Are there unpermitted discharges from the facility to surface water that require an NPDES or a Section 404 permit?	___	✓
o Is there visible evidence of uncontrolled run-off from units at the facility?	___	✓
<u>Determining the Relative Effect of the Release on Human Health and the Environment</u>		
1. o Are there drinking water intakes nearby?	___	✓
o Could human and/or environmental receptors come into contact with surface drainage from the facility?	___	✓
o Are there irrigation water intakes nearby?	___	✓
o Could a sensitive environment (e.g., critical habitat, wetlands) be affected by the discharge (if it is nearby)?	___	✓

1. OBSERVED RELEASE

Contaminants detected:

None

Date and Location of detection of contaminants:

Methods used to detect the contaminants:

Rationale for attributing the contaminants to the site:

2. WASTE CHARACTERISTICS

Reactivity and Incompatibility

Most reactive compound:

None

Most incompatible pair of compounds:

None

Toxicity

Most toxic compound:

Chromium

Hazardous Waste Quantity

Total quantity of hazardous waste:

See Page 4 #4

Basis of estimating and/or computing waste quantity:

See Page 4 #4

	Yes	No
Identifying Releases		
1. Potential for Air Releases from the Facility		
o Unit Characteristics		
- Is the unit operating and does is expose waste to the atmosphere?	___	✓
- Does the size of the unit (e.g., depth and surface area) create a potential for air release?	___	✓
o Does the unit contain waste that exhibits a moderate or high potential for vapor phase release?		
- Does the unit contain hazardous constituents of concern as vapor releases?	___	✓
- Do waste constituents have a high potential for volatilization (e.g., physical form, concentrations, and constituent-specific physical and chemical parameters that contribute to volatilization)?	___	✓
o Does the unit contain waste and exhibit site conditions that suggest a moderate or high potential for particulate release?		
- Does the unit contain hazardous constituents of concern as particulate releases?	___	✓
- Do constituents of concern as particulate releases (e.g., smaller, inhalable particulates) have potential for release via wind erosion, reentrainment by moving vehicles, or operational activities?	___	✓
- Are particulate releases comprised of small particles that tend to travel off-site?	___	✓
o Do certain environmental and geographic factors affect the concentrations of airborne contaminants?		
- Do atmospheric/geographic conditions limit constituent dispersion (e.g., areas with atmospheric conditions that result in inversions)?	___	✓
- Is the facility located in a hot, dry area?	✓	___

	Yes	No
2. Evidence of Air Releases		
o Does on-site monitoring data show that releases have occurred or are occurring (e.g., OSHA data)?	___	✓
o Have particulate emissions been observed at the site?	___	✓
o Have there been citizen complaints concerning odors or observed particulate emissions from the site?	___	✓

Determining the Relative Effect of the Release on Human Health and the Environment

1. Exposure Potential		
o Is a populated area located near the site?	___	✓

Checklist for Subsurface Gas Releases

	Yes	No
Identifying a Release		
1. Potential for Subsurface Gas Releases		
o Does the unit contain waste that generates methane or generates volatile constituents that may be carried by methane (e.g., decomposable refuse/volatile organic wastes)?	___	✓
o Is the unit an active or closed landfill or a unit closed as a landfill (e.g., surface impoundments and waste piles)?	___	✓
2. Migration of Subsurface Gas to On-site or Off-site Buildings		
o Are on-site or off-site buildings close to the unit?	✓	___
o Do natural or engineered barriers prevent gas migration from the unit to on-site or off-site buildings (e.g., low soil permeability and porosity hydrogeologic barriers/liners, slurry walls, gas control systems)?	___	✓
o Do natural site characteristics or man-made structures (e.g., underground power transmission lines, sewer pipes/sand and gravel lenses) facilitate gas migration from the unit to buildings?	___	✓
Determining the Relative Effect of the Release on Human Health and the Environment		
1. Exposure Potential		
o Does building usage (e.g., residential, commercial) exhibit high potential for exposure?	___	✓

FIRE AND EXPLOSION

1. CONTAINMENT

Hazardous substances present:

See #4 Page 4

Type of containment, if applicable:

2. WASTE CHARACTERISTICS

Direct Evidence

Type of instrument and measurements:

None

Ignitability

Compound used:

None

Reactivity

Most reactive compound:

None

Incompatibility

Most incompatible pair of compounds:

None

Hazardous Waste Quantity

Total quantity of hazardous substances at the facility:

See Page 4 #4

Basis of estimating and/or computing waste quantity:

See Page 4 #4

3. TARGETS

Distance to Nearest Population

10 ft

Distance to Nearest Building

10 ft

Distance to Sensitive Environment

Distance to wetlands:

Greater than 100 feet

Distance to critical habitat:

Greater than 1/2 mile

Land Use

Distance to commercial/industrial area, if 1 mile or less:

The INEL is a research facility. There are no commercial/ industrial facilities within 1 mile.

Distance to national or state park, forest, or wildlife reserve, if 2 miles or less:

Greater than 2 miles

Distance to residential area, if 2 miles or less:

Greater than 2 miles

Distance to agricultural land in production within past 3 years, if 1 mile or less:

Greater than 1 mile

Distance to prima agricultural land in production within past 3 years, if 2 miles or less:

Greater than 2 miles

If a historic or landmark site (National Register or Historic Places and National Natural Landmarks) within the view of the site?

Big Southern Butte

Population Within 2-Mile Radius

1828

Buildings Within 2-Mile Radius

189

1. OBSERVED INCIDENT

Date, location, and pertinent details of incident:

None

2. ACCESSIBILITY

Describe type of barrier(s):

Buried

3. CONTAINMENT

Type of containment, if applicable:

4. WASTE CHARACTERISTICS

Toxicity

Compounds evaluated:

See Page 4 #4

Compound with highest score:

See Page 4 #4

5. TARGETS

Population within one-mile radius

1367

Distance to critical habitat (of endangered species)

Greater than 1 mile

ECA 20 REFERENCE 2(A).

FORM WINCO-5027 (8-84)

Westinghouse Idaho
Nuclear Company, Inc.

MEMO OF CONVERSATION

Date Dec. 18, 1991 Time _____ Commitment Made ☐ Yes ☐ No Date: _____

Person Calling Nielsen Burns Person Called George Dinka

Representing _____ Representing _____

Purpose of Conversation _____

Text of Conversation Where did the soil come from that was used to backfill ~~over~~ for the FFTF project?

That fill came from a pit at Central.

Signed Nielsen Burns Date 12/18/91

ECA 20 REFERENCE 2(B).

FORM WINCO-5027 (8-84)

Westinghouse Idaho Nuclear Company, Inc.

MEMO OF CONVERSATION

Date Dec 17, '91 Time 8:00 am Commitment Made ☐ Yes ☐ No Date: _____

Person Calling Nielsen Lund Person Called Frank Ward started with WINCO 1978

Representing WINCO Representing WINCO

Purpose of Conversation Discuss the unloading of liquid wastes from trucks at CPP. CPP-20

Text of Conversation Unloading risk plan by pressurized vessel discharge. Leaks were the result of holes in the transfer line. During transfer the vessel would be pressurized to around 15 psi.

Burn was removed twice. No contamination found except one section next to valve box C-30 at 40' below grade. First 10' of back fill was < 5 mR/hr the rest was clean soil. One excavation that would have removed the burn was the installation of Valve box C-30 and transferlines. The other excavation would have been the EPFU project which installed tanks 132 and 133.

Betty Standfield should have records of contamination found. George Bruha has FPFU information. Project 2165 Low Level Waste.

Signed Nielsen Lund Date 12/17/91

ECA 20 REFERENCE 2(c).

FORM WINCO-5027 (8-84)

Westinghouse Idaho Nuclear Company, Inc.

cc Brenda Cole
George Bruha

For: Carol Mascarenas

MEMO OF CONVERSATION

Date Jan 8, 1992 Time 2:20 pm Commitment Made ☐ Yes ☐ No Date: _____

Person Calling B Cole Person Called George Bruha 6 3513 5306

Representing EP Representing Major Projects

Purpose of Conversation Find count of the dirt @ 604

Text of Conversation East Side excavation they were allowed to use 3mR/hr dirt They backfilled with ~ 10 ft w/ 3mR/hr & ~30 ft with clean dirt Time frame was about 1984.

North side excavation they backfilled ~ 10 ft with 5mR/hr dirt & then ~ 30 ft with clean dirt.

Post-it™ brand fax transmittal memo 7671 | # of pages ▸ |

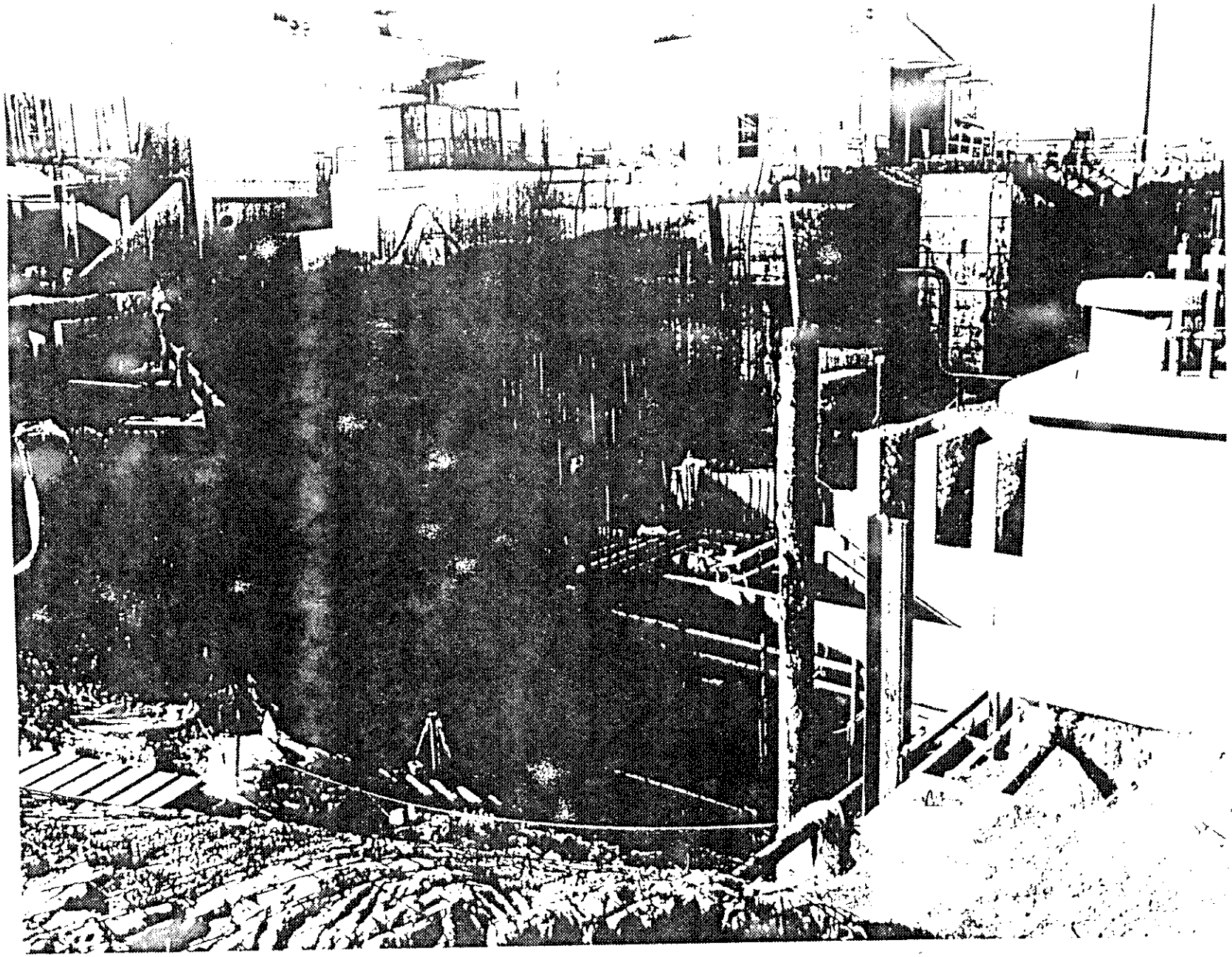
To Carol Mascarenas	From B. Cole
Co.	Co.
Dept.	Phone # 6 8520
Fax # 6 0666	Fax #

Signed Brenda Cole Date 1-8-92

Appendix A

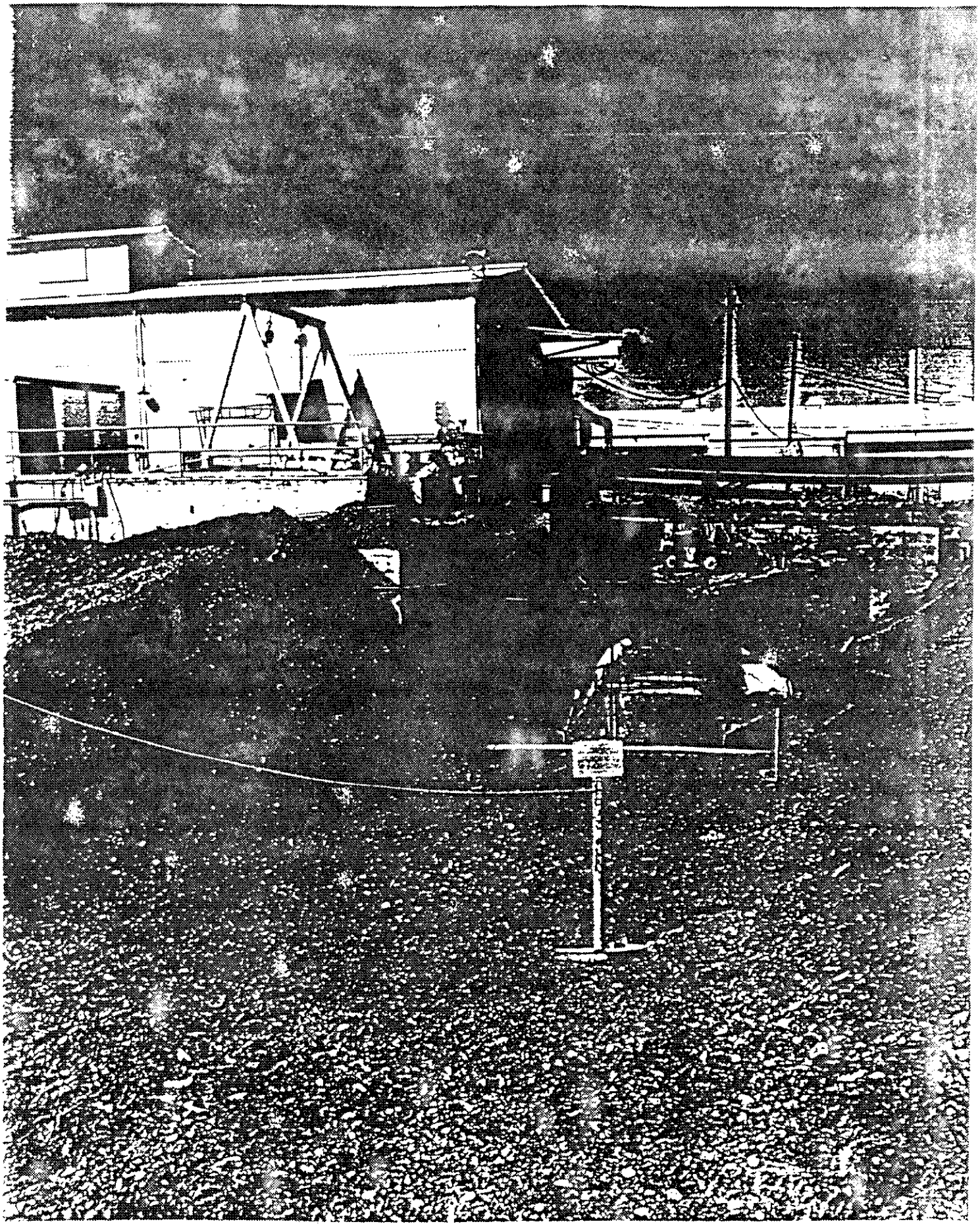
Track 1 Decision Documents for Sites CPP-16, CPP-20, CPP-24, CPP-25, CPP-30, and CPP-32

ECA 20 REFERENCE 3(A).



PROJECT TITLE: FPFU - Low-Level Waste Collection System Modification
CONTRACT NO: S-2165
CONSTRUCTION CONTRACTOR: Ovard & Collins
DATE: November 11, 1983
SUBJECT: CELL WALLS TO EL-4895' 0" - 83-602-1-6

ECA 20 REFERENCE 3(B).



82 3471

ECA 20 REFERENCE 4.

Cleanup

CPP 670

ENVIRONMENTAL EVALUATION

for

DISPOSAL OF WL-102 LOW LEVEL CONTAMINATED SOIL

EFFLUENT MONITORING AND ENVIRONMENTAL SCIENCES

RADIATION AND ENVIRONMENTAL SAFETY SECTION

WESTINGHOUSE IDAHO NUCLEAR CO., INC.

MAY 17, 1984

1. INTRODUCTION.

During the summer of 1983, work was begun on the Fuel Processing Facility Upgrade (FPFU) at the Idaho Chemical Processing Plant (ICPP). One of the activities of this upgrade was the Low Level Waste Upgrade Project, involving replacement of the WL-102 tank. Much of the soil excavated from around the tank during replacement was found to be contaminated. Highly contaminated soil was boxed and transported to the Radioactive Waste Management Complex (RWMC). Low level contaminated soil was moved to an area east of CPP-603 (Figure 1) until a permanent means of disposal could be found. Most of the soil in the pile east of CPP-603 was transported there in August and September of 1983.

Burial of the contaminated soil on the ICPP site was chosen as the best method of disposal. Finding an appropriate site for burial, however, has been a problem. Sites previously considered include the south perimeter of the ICPP facility, the southeast perimeter, and several areas outside the ICPP boundaries. The site currently under consideration lies in the northeastern corner of the ICPP facility, as discussed in 2.2 below.

2. DESCRIPTION OF THE PROPOSED ACTION.

2.1 Objectives.

The objective of the project is to dispose of the contaminated soil in a safe, environmentally sound manner. Disposal should *not impact present plant activities or future plant expansion.* The soil disposal will be accomplished in a manner which will prevent or minimize local spread of contamination during loading, transport and burial.

2.2 Location.

The site now selected for disposal lies in the northeastern corner of the ICPP plant site, situated between the animal and security fences (Figure 1). The main burial area will be a trench 10 feet deep beginning on the east side of the ICPP, north of the sewage line leading to the Domestic Waste Treatment Plant (DWTP). It continues to the north perimeter, and runs west along the north fence for approximately 500 feet. A smaller area will exist further south, between the sewage line and a proposed drainage channel. Disposal in both areas will be on a one time only basis (Reference 1). The trench shall be 10 feet deep, 25 feet wide at the bottom, and 45 feet wide at the top, lying 5 feet inside the animal fence. Slope of the sides is 1:1. Drawings and coordinates of the trench shall be provided on an "as built" basis. Excavation and burial criteria are the same as outlined in Reference 2 except for the change in site location.

2.3 Project Plan.

The project calls for approximately 12,000 cubic yards of soil to be buried in the trench. Contaminated soil will be spread and compacted in the trench to a depth of 8 feet. Two feet of clean fill (approximately 4,000 cubic yards) will be placed on top to prevent dispersion of contaminated soil.

Soil will be moved from the pile east of CPP-603 to the burial area along a designated route (Figure 1). This route was chosen to minimize potential contamination spread. A contractor will supply loaders, dump trucks, compaction and earth moving equipment necessary to complete the job.

The project will basically consist of loading the trucks at the dirt pile, transporting the soil along the route to the trench, dumping the soil there for spreading and compaction, and returning to repeat the procedure. Special precautions will be taken to limit spread of contamination. These are discussed in section 4.1.1.

3. DESCRIPTION OF THE EXISTING ENVIRONMENT.

The existing environments of the INEL and ICPP have been described in detail elsewhere (References 3 and 4). As such, the environmental characteristics of the site and facility will not be detailed here.

The environment of the burial area is the same as described above. The land generally slopes gently toward the Big Lost River. Basically undisturbed high steppe lies north of the burial area. The DWTP lies to the east, and the remainder of the ICPP facility to the south and west.

4. POTENTIAL ENVIRONMENTAL EFFECTS.

4.1 Radiation Exposure.

Radionuclides found in the contaminated soil stockpiled east of CPP-603 are Co-60, Cs-134, Cs-137, Eu-154, Eu-155, Pu-238, and Pu-239/240. Average total sample activity was 1 E+3 d/s/g. Greater than 99% of the activity was due to Cs-137 and Sr-90. Plutonium is well tagged with fission products, with the average total Pu to Cs-137 ratio being 1:350.

External exposure readings from the pile are generally 2-3 mR/hr, with maximum readings being less than 30 mR/hr (Reference 2). Primary inhalation dose hazards are Pu and Sr-90. Concentrations of radionuclides in the soil are low enough so as not to present significant internal or external hazards. Special health physics precautions will be taken, however, to minimize potential exposure or spread of contamination.

4.1.1 Special Health Physics Precautions.

4.1.1.1 Transport Route.

A specific route has been designated for transporting the dirt from the pile to the burial area (Figure 1.). This route minimizes intersection of the transport route with general automobile and pedestrian traffic, reducing the probability for spread of contamination.

4.1.1.2 Loading and Transport.

The following precautions will be taken to minimize local spread of contamination during loading and transport:

The soil must be dampened prior to loading on the trucks;

No soil is to be loaded above the sideboards of the truck;

Dirt spilled on the truck during loading and dumping will be brushed off by contractor personnel before the trucks are allowed to move;

No operations will be allowed when the wind speed exceeds 25 mph;

Health physics technicians will be present at the loading and dumping sites to assure minimum possible contamination spread;

the transport route will be roped off where necessary to prevent inadvertent access to the route and prevent possible contamination spread;

areas where the transport route and general traffic routes cross will be periodically checked to insure there is no contamination present. Surveys will be performed each day after the trucks are finished and before buses are allowed into the area;

contractor personnel will be informed of the contamination present and precautions which need to be taken; and

the Operational Health Physics subsection, Radiation and Environmental Safety section (R&ES), may request changes in equipment, personnel or procedures to insure necessary contamination control is present.

4.1.1.3 Decontamination.

All equipment will be decontaminated at the completion of the project in a manner deemed appropriate by the Operational Health Physics subsection and the Projects Department.

4.1.1.4 Sampling.

Soil being buried will be sampled by health physics technicians from approximately every tenth truck which dumps. A daily composite sample will be made and submitted for radioanalysis. Radioanalyses performed on all samples will consist of a gamma-scan and a gross alpha count. If gross alpha measurements are high, qualitative and quantitative analyses for alpha emitters (mainly Pu) will be performed. Samples will need to be saved in order for EM&ES personnel to make this decision.

4.2 Ground Water.

The proposed location and shallow burial of the contaminated soil will preclude any problems with well water contamination. ICPP production wells No. 1 and 2 are located greater than 500 feet to the west of the proposed burial site, while the ICPP potable water well (No. 4) is located approximately 300 feet north of the proposed burial site. These distances are sufficient to prevent shallow migration of radionuclides to the ICPP wells, given past history of ICPP soils to adsorb fission products. According to available USGS maps of the ICPP, no abandoned wells or boreholes exist in or near the proposed burial site which could provide pathways for radionuclides to the aquifer. Future placement of wells in or near this area will require careful evaluation prior to drilling.

Formation of a perched-water body, such as that recently determined to exist under the Service Waste Percolation Pond (SWPP), is thought to be unlikely. The Projects Department has pointed out that the permeability of the soils in the northeast corner of the ICPP is 4 to 6 times greater than that of the soils at the south end of the facility. Because of this greater permeability, the northeastern burial site is not as likely to be impacted by shallow ground waters as is a southern burial site.

There is no major source of recharge upstream of the northeastern site. Furthermore, discharge to the DWTP is only 25,000 gallons/day, compared to the 1.5 million gallons discharged daily to the SWPP.

The ICPP is underlain by three shallow sedimentary layers, all of which slope southward and away from the proposed northeastern site. A perched-water body formed under the Domestic Waste Treatment Plant (DWTP) would thus be directed away from the burial area.

4.3 Surface Water.

The proposed burial area does lie topographically lower than much of the ICPP site. Drainage from the site runs to the north. As a result, problems with surface drainage could occur, particularly during the excavation and filling period. A proposed drainage system (Reference 5) will route most of the plant surface drainage away from the burial area.

The possibility of a 100 or 300 year flood disturbing the site has also been considered. There is a probability of dispersion of low-level radioactive contamination from the burial site in this instance. A greater concern, however, would be the spread of high level contamination in other parts of the plant inundated by a flood of this magnitude. The ICPP is designing a dike system to route flood waters away from the plant site.

4.4 Dispersion of Contaminated Soil.

4.4.1 Dispersion by Plants and Wildlife.

Burrowing rodents and radionuclide uptake by plants do represent potential pathways for dispersion of the buried radioactive soil. Dispersion by rodents is probably of greater concern than plant uptake. Because of the low levels of contamination present in the soil, the potential for significant spread of contamination seems to be minor.

4.4.2 Mechanical Dispersion.

One pathway for dispersion of contaminated soil is during the mechanical phase of the project. Dust raised by front-end loaders, caterpillars, graders, and blown from the beds of trucks hauling the soil could result in local spread of contamination. To prevent or minimize this situation, all phases of loading, transporting, dumping, and burying the dirt will be closely supervised by the Operational Health Physics subsection. Operational Health Physics has previous experience in moving contaminated soil, and will be responsible for determining what procedures are necessary to limit spread of contamination and provide adequate worker protection.

4.5 Other Effects.

The project is not expected to have any other environmental impacts. No long term effects are expected as long as the site is allowed to remain undisturbed.

5. ENVIRONMENTAL MONITORING AND MEASUREMENTS.

Ambient air monitoring around the CPP-603 dirt pile is currently done by the Effluent Monitoring and Environmental Sciences subsection (EM&ES). EM&ES will continue air monitoring during loading and transport phases of the project to determine the extent, if any, of contaminated dust dispersion.

As discussed in section 4 above, health physics technicians will perform periodic ground surveys along the transport route to detect and prevent spread of contaminated soil. Also, periodic sampling of the soil will be done to determine the amount of radioactivity in the soil.

6. ALTERNATIVES.

Burial of the soil is considered the only feasible alternative. Boxing and shipment to the RWMC is not cost effective, is not warranted for the low levels of radioactivity present, and would occupy a sizeable amount of the available burial volume. Leaving the pile in its present location allows dispersion by wind, leaching of radionuclides by rain and watering, and constant attention by health physics and EM&ES personnel.

Several alternative sites for burial have been considered. The most attractive site was burial along the southern perimeter of the ICPP facility (Reference 2). Transporting the soil would have been easier and faster, resulting in less potential for spreading contamination. That area, however, is potentially threatened by a perched-water body beneath the SWPP. Other perimeter sites were considered, but were rejected because of their impact on potential plant expansion. Areas outside the ICPP perimeter which were initially considered were discarded at the request of DOE-ID.

7. SUMMARY.

Environmental impacts of the project are limited. This is due primarily to the low levels of radioactive contamination in the soil. The most significant potential impact appears to result from dispersion of contaminated soil during loading and hauling operations. This dispersion can be minimized, however, with proper health physics precautions.

Movement of the dirt to the proposed disposal location and its subsequent burial has less potential environmental impact than other alternatives. Transport and burial of the contaminated soil can be accomplished without undue exposure to contractors, ICPP and INEL personnel, or the general public.

8. REFERENCES.

1. J.F. Erben, Letter JFE-13-84, to R.J. Bliss, E.W. Pottmeyer, and J.J. Volpe, "Location of Contaminated Dirt Burial" (April 16, 1984).

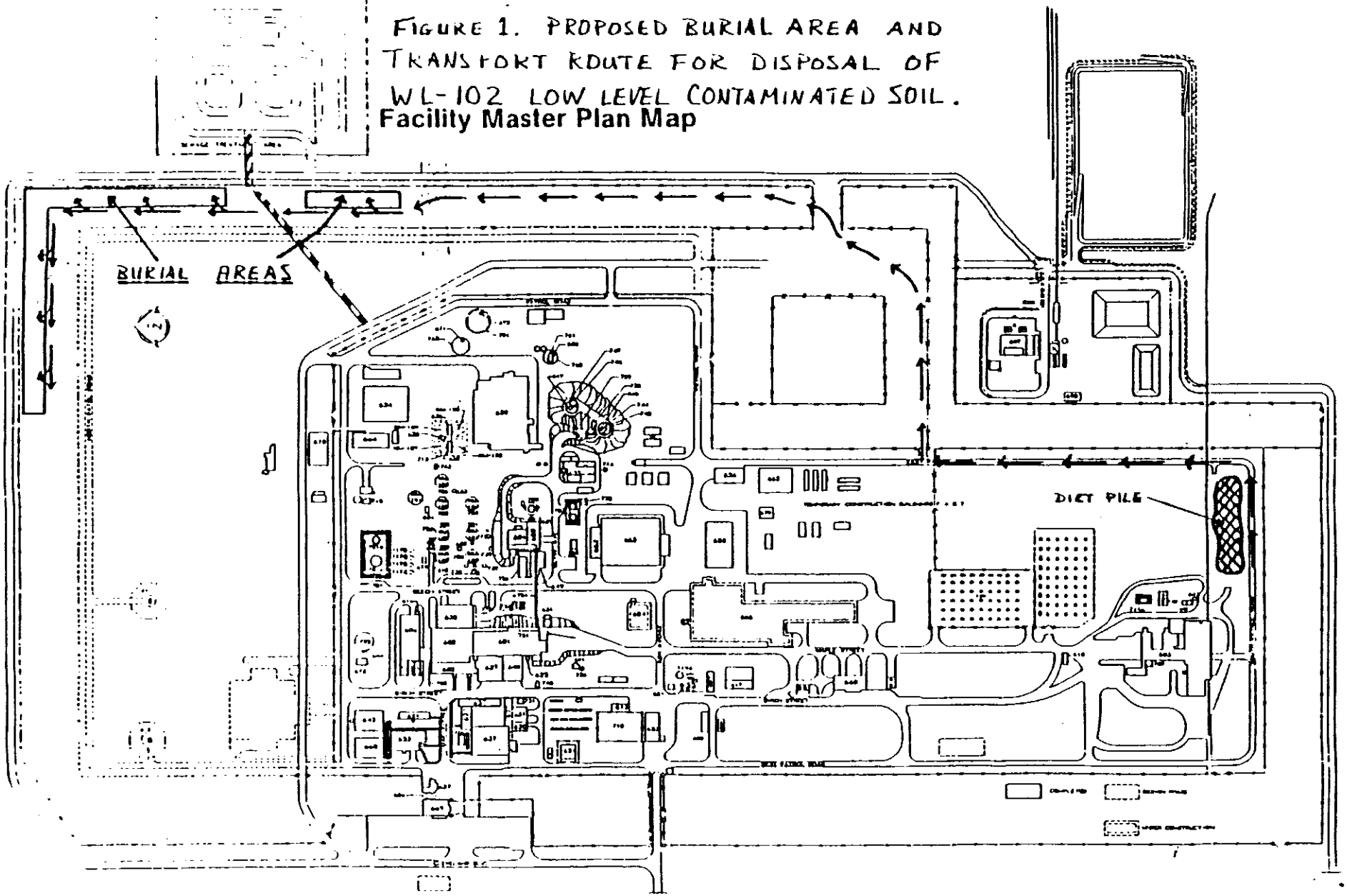
2. G.E. Bingham, WINCO, Letter BING-68-84, to M.J. Bonkoski, DOE-ID, "Disposal of Excess WL-102 Contaminated Dirt" (April 10, 1984).

3. J.H. Keller, et al., Environmental Evaluation for field measurements of Wet Deposition of Radioiodine, Exxon Nuclear Idaho Co., Inc., (June 1983).

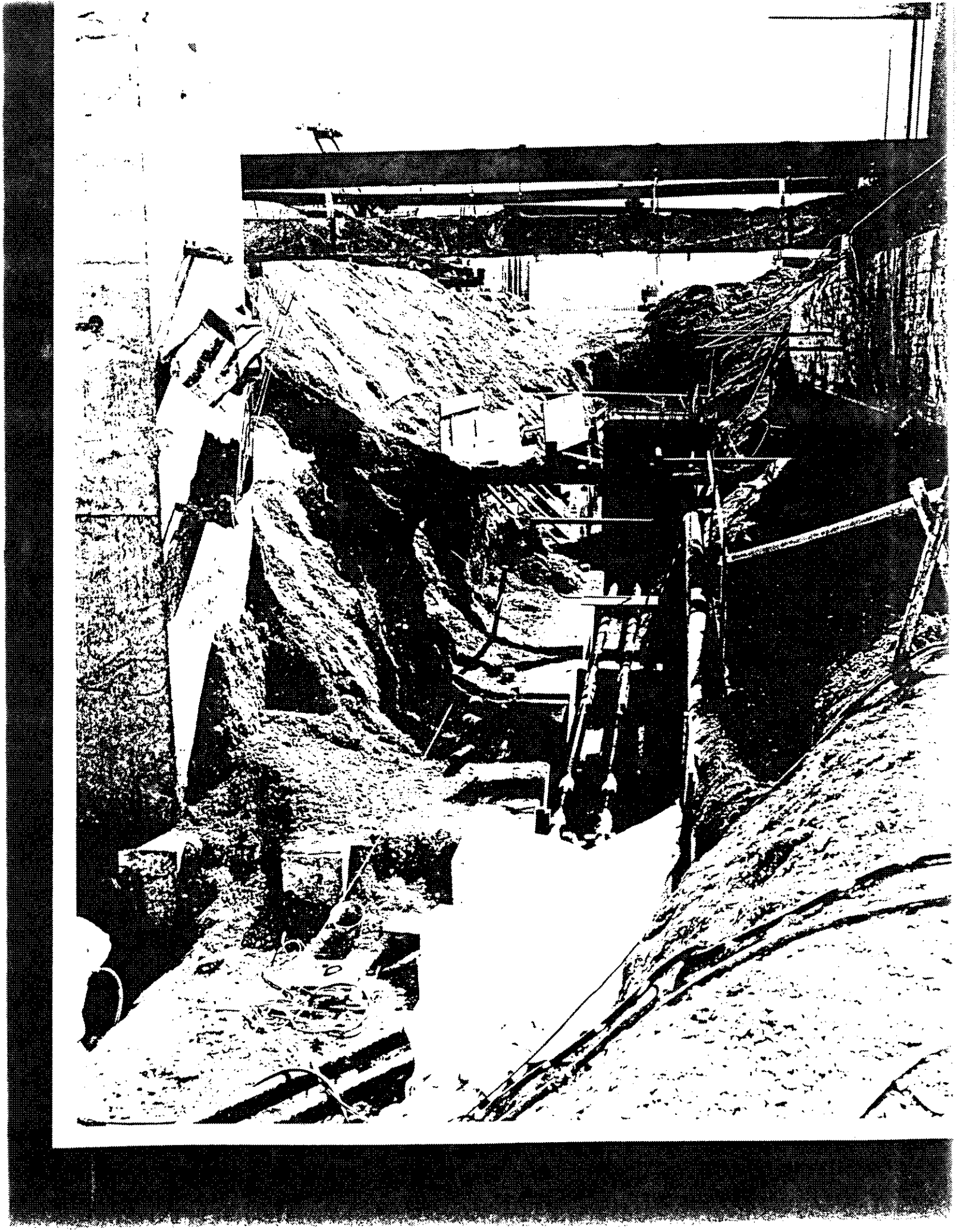
4. Environmental Sciences Section, EG&G Idaho, Inc. Environmental Evaluation for the PEW Evaporator Disposal Alternatives, EE-83-002 (May 1983).

5. Environmental Evaluation for ICPP Drainage System, ICPP, INEL, Idaho.

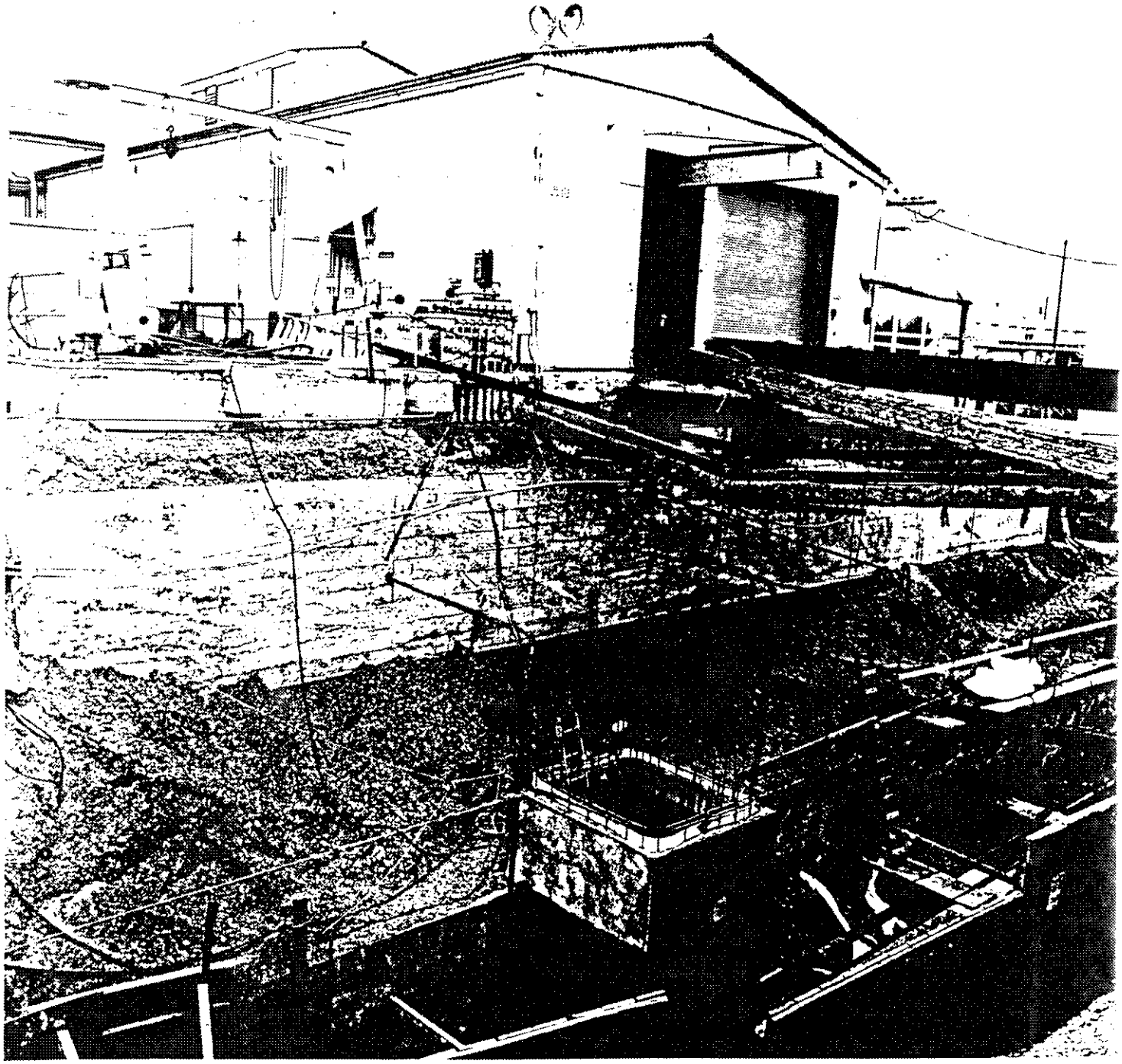
FIGURE 1. PROPOSED BURIAL AREA AND TRANSPORT ROUTE FOR DISPOSAL OF WL-102 LOW LEVEL CONTAMINATED SOIL.



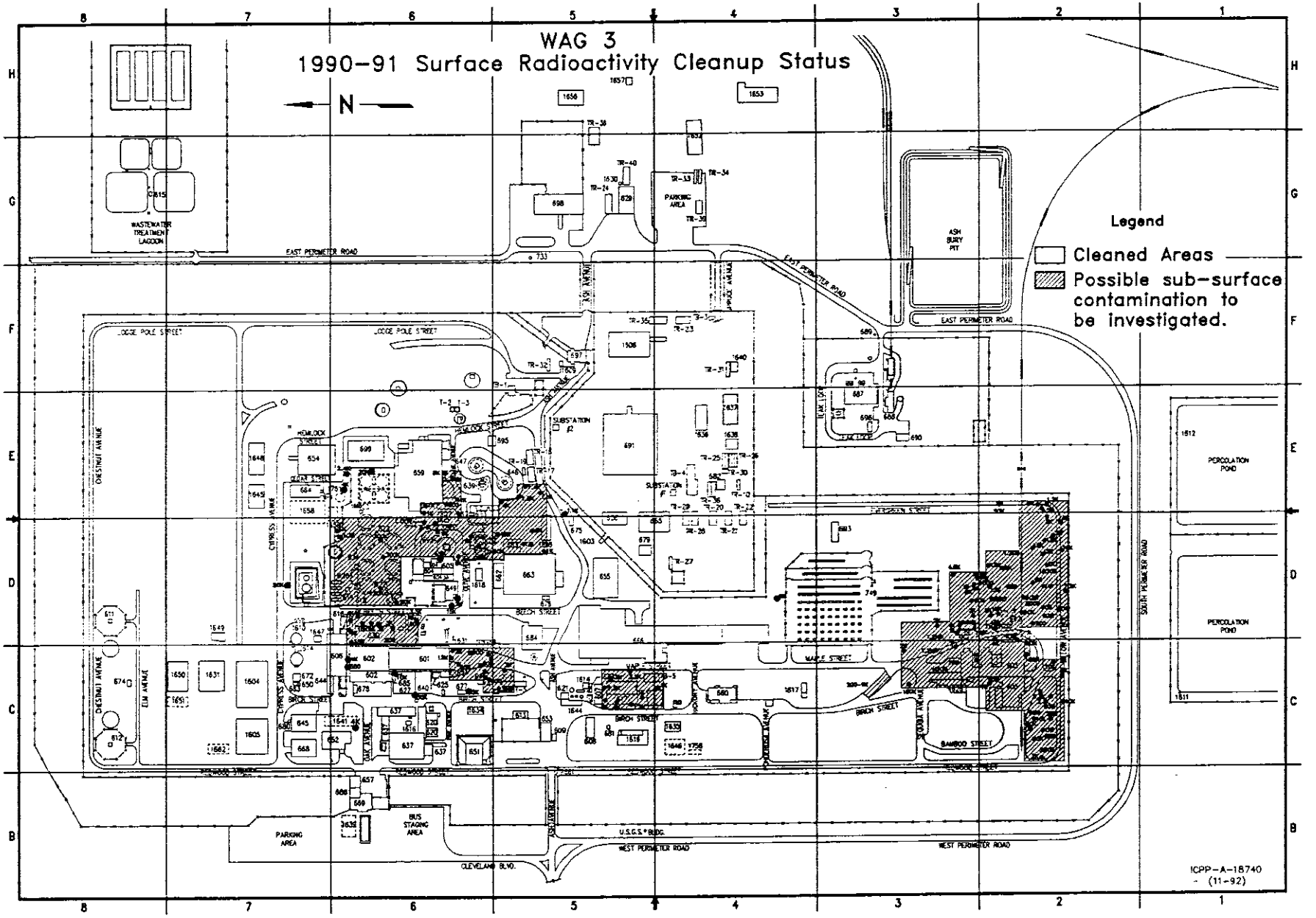
ECA 20 REFERENCE 5



ECA 20 REFERENCE 6



ECA 20 REFERENCE 7


WAG 3
1990–91 Surface Radioactivity Cleanup Status
N
Legend
Cleaned Areas
Possible sub-surface contamination to be investigated.
EAST PERIMETER ROAD
WEST PERIMETER ROAD
SOUTH PERIMETER ROAD
CLEVELAND BLVD.
LOGE POLE STREET
HEMLOCK STREET
BEECH STREET
MAPLE STREET
BIRCH STREET
BAMBOO STREET
CHESTNUT AVENUE
CYPRESS AVENUE
ASH AVENUE
ELM AVENUE
OAK AVENUE
POPLAR AVENUE
ASH BURY PIT
PERCOLATION POND
PERCOLATION POND
WASTEWATER TREATMENT LAGOON
PARKING AREA
BUS STAGING AREA
PARKING AREA
SUBSTATION
SUBSTATION
U.S.G.S. BLDG.
ICPP-A-18740
(11-92)